

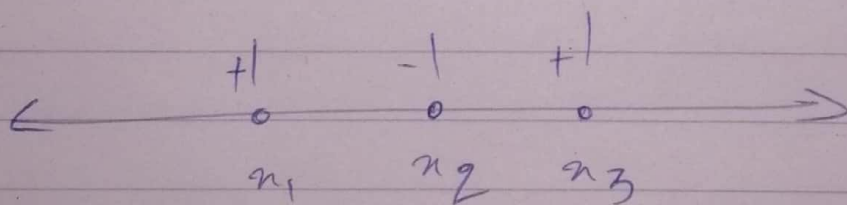
VC-dimension of a hypothesis space is the maximum size of finite subset space shattered by the hypothesis space in this example we have

$$h(x) = +1 \text{ if } a < x < b, \text{ otherwise } h(x) = -1$$

consider the ~~two~~ subset of consisting two elements

all dichotomies of two point is shattered by the hypothesis so  $vc(h) \geq 2$  lets try for three

consider the following dichotomy:



we have  $x_1 < x_2 < x_3$  if a hypothesis shatter this dichotomy

we should have  $a < x_1, x_3 < b$  and  $b < x_2 < a$

so  ~~$a < b$  and  $b < a$~~  which is ~~on~~  $x_3 < b < x_2$

which is contradiction so  $vc(h) = 2$